

Southern New Hampshire Sample Collection Plan for Non-Targeted Poly- and Perfluoroalkyl Substances (PFAS) Analyses

March 1, 2018

1.0 Objective

The objective of this sampling program is to identify the occurrence of the full spectrum of poly- and perfluoroalkyl substances (PFAS) in process feedstocks, product residuals, air emissions, surface water, groundwater and soil near two textile manufacturing facilities in southern New Hampshire. The identification of PFAS compounds will be completed by using a high resolution mass spectrometer at the United States Environmental Protection Agency's Office of Research and Development's lab at Research Triangle Park in Durham, NC. The information is needed to identify the specific PFAS compounds and their byproducts associated with air emissions that are being detected in the environment. NHDES will use this information to identify other target PFAS compounds in an effort to expand commercial labs analyte lists.

2.0 Approach to Work

The approach to completing the work is described in Tasks 1-9, below. The sampling locations associated with each task are shown in figure attached as a file named "Figure."

Task 1 - Sample PFAS-Based Dispersion Products at Textile Coating Facilities

Samples of raw dispersion products consisting of PFAS compounds will be collected at two textile coating facilities. Products will be sampled at the Saint-Gobain Performance Plastics (SGPPL) facility in Merrimack, NH and the Textile Coating International (TCI) facility in Manchester, NH. These thirteen dispersions represent all the raw dispersions currently in use at the two facilities.

Task 2 – Sample Char/Carbon Material Taken from Air Emission Towers at SGPPL

Three samples of solid materials that accumulate on the interior of the towers will be collected and are summarized as follows:

- One sample from the MA Tower which has been in operation at SGPPL since 1994. The ductwork was replaced and the oven and ancillary process components were cleaned in 2016. Therefore, the solid material that will be collected from this stack will most likely represent new dispersions used since 2016.
- One sample from the MS Tower which has been in operation at SGPPL since 2002. The solid material that will be collected from this stack may potentially contain residue components from pre-2006 PFOA based dispersions AND new dispersions that have been used since 2006.
- One sample from the QX Tower which has been in operation at SGPPL since 1989. This tower has the highest PFOA partition factor based on previous stack test results and therefore potentially

receives the highest load of emissions. The solid material that will be collected from this stack may potentially contain residue components from pre-2006 PFOA based dispersions AND new dispersions that have been used since 2006.

Summaries of analytical data associated with the dispersion materials and char material are included in the file named "Task 2 Attachments."¹

Task 3 – Sample Highly Contaminated Groundwater and Soil Immediately Downgradient of the SGPPL Facility

A water sample will be collected from a shallow groundwater monitoring well immediately adjacent to and downgradient of the SGPPL property. A soil boring will be advanced 6-8 feet deep and approximately four soil profile samples will be collected.

Summaries of analytical data associated with groundwater and soil sampling at the SGPPL facility are included in the file named "Task 3 Attachments."

Task 4 – Surface Water Sampling

One water sample will be collected from the stormwater outfall that discharges stormwater from the SGPPL facility to the Merrimack River. Two samples of surface water will be collected from the Merrimack River up gradient and downgradient of the facility. Two water samples will be collected from Dumping Brook which flows into the Merrimack River near the SGPPL property.

A summary of analytical data associated with the storm water outfall associated with the SGPPL facility is included in the file named "Task 4 Attachments." Water quality data for the Merrimack River and Dumping Brook have not been collected to date.

Task 5 – Groundwater Sampling – Wells with Groundwater Exceeding 200 Parts-Per-Trillion PFOA

Groundwater samples will be collected from four private wells near SGPPL that exceed 200 Parts-Per Trillion (ppt) for PFOA.

A summary of analytical data for all of the potential private wells that meet this criterion is included in the file named "Task 5 Attachments."

Task 6 - Groundwater Sampling – Wells with PFOA Concentrations between 50 and 100 ppt PFOA

Groundwater samples will be collected from four private wells located within three miles of the SGPPL facility that exhibit PFOA concentrations between 50-100 ppt.

¹ The sample numbering in the Task 2 Attachments do not necessarily correspond to the sample numbering used in this exercise.

A summary of analytical data for all of the potential private wells that meet this criterion is included in the file named "Task 6 Attachments."

Task 7 – Groundwater Sampling – Wells With Elevated PFOA and PFOS Concentrations and Located Near Additional Sources of PFAS Contamination

Groundwater samples will be collected from six private wells that exhibit a combined concentration of PFOA and PFOS above 70 ppt and are located in areas that are: 1) Likely impacted by PFAS releases to air associated with SGPPL; and 2) Alleged to be potentially impacted by additional potential sources of PFAS.

A summary of analytical data for all of the potential private wells that meet this criterion is included in the file named "Task 7 Attachments."

Task 8 – Groundwater Sampling – Merrimack Village District Wells 4 and 5

A groundwater sample will be collected from both Merrimack Village District (MVD) Well 4 and MVD Well 5.

A summary of analytical data for MVD 4 and MVD 5 is included in the file named "Task 8 Attachments."

Task 9 – Dust Sampling – Webster Green Condominium Complex

A complaint from an abutter of one of the textile manufacturing facilities has prompted NHDES to initiate residue sampling and analysis at the complaint location. NHDES will collect samples from the exterior window sills of two condominiums located in the Webster Green Condominium Complex for analysis at ORD.

The following types and quantities of samples will be collected for each project task.

	Groundwater	Surface Water	Soil	Char Material from Tower Stacks	Raw Dispersions	Window Sill Dust
Task 1					13	
Task 2				3		
Task 3	1		4			
Task 4		5				
Task 5	4					
Task 6	4					
Task 7	6					
Task 8	2					
Task 9						2
Total	17	5	4	3	13	2
Total Number of Samples>>>						44

3.0 Sampling Procedures and Quality Assurance Project Plan

NHDES' Quality Assurance Project Plan (QAPP) is included as an attached file. The procedures for sampling for PFAS in the QAPP begin on document page 246. Additional information describing the soil sample collection methodology is included in an attached file.

4.0 Schedule

The sample collection for Tasks 1-8 described in this work plan shall be completed from August 28, 2017 – September 22, 2017. Sampling for tasks 1-8 will occur concurrently. The sample collection for Task 9 shall be completed in March, 2018.